

I CLAIM:

1 1. A communication bridge comprising: an established protocol interface and the
2 communication bridge further comprises; a means for programing the established protocol
3 interface to first mode of operation and a second mode of operation, the established protocol
4 interface includes a means for transferring established protocol cells between the
5 communication bridge and the first device layers when in the first mode of operation and
6 for transferring the established protocol cells between the communication bridge and the
7 second device layers when in the second mode of operation;
8 a serial interface;
9 a down bridge direction and an up bridge direction and in the down bridge direction
10 the communication bridge includes;
11 a means for detecting back pressure;
12 a means for converting the established protocol cell to a transport container, the
13 means being operatively connected to the established protocol interface including an
14 assembler means for embedding back pressure detection into the transport container, and
15 being operatively connected to the means for detecting ; and
16 a means for applying the transport container to the serial interface, the means for
17 applying being operatively connected to the means for converting and to the serial interface.

1 2. The communication bridge according to claim 1, wherein the means for applying
2 includes a means for arranging a predefined number of transport containers into a frame.

1 3. The communication bridge according to claim 2, wherein each transport container
2 includes at least one control byte and the communication bridge comprises a means for
3 embedding the detected back pressure into the control byte.

1 4. The communication bridge according to claim 3 further includes a means for
2 embedding communication information into at least one control byte in a predefined
3 transport container of each block.

1 5. The communication bridge according to claim 4 wherein the communication
2 comprises a back pressure information.

1 6. The communication bridge according to claim 5 wherein each block represents a
2 sub-port with each sub-port being capable of connecting to a plurality of ports and each of
3 one of a plurality of bits in the at least one control byte being used to identify a port with
4 back pressure, the communication bridge comprises a means for setting a first logic state
5 in a bit identifying the port with back pressure.

1 7. A communication bridge comprising: an established protocol interface and the
2 communication bridge further comprises; a means for programing the established protocol
3 interface to first mode of operation and a second mode of operation, the established protocol
4 interface includes a means for transferring established protocol cells between the
5 communication bridge and the first device layers when in the first mode of operation and
6 for transferring the established protocol cells between the communication bridge and the
7 second device layers when in the second mode of operation;

8 a serial interface;

9 a down bridge direction and an up bridge direction and in the up bridge direction the
10 communication bridge includes;

11 a means for receiving a transport container including a header, and a payload field
12 and at least one control byte with each byte comprising a plurality of bits;

13 a means for detecting back pressure being operatively connected to the means for
14 receiving;

15 a means for converting the transport container to the established protocol cell, the
16 means being operatively connected to the established protocol interface and to the means for
17 receiving; and

18 a means for applying the established protocol cell to the established protocol
19 interface, the means for applying being operatively connected to the means for converting
20 and to the established protocol interface.

1 8. The communication bridge according to claim 7, wherein the means for receiving
2 the transport container includes a means for receiving a frame having a predefined number
3 of transport containers.

1 9. The communication bridge according to claim 8, wherein the frame being
2 composed of N blocks of transport containers where N is a positive number with each block
3 including M transport containers where M is a positive number and each transport container
4 includes at least one control byte, and the means for receiving the transport containers
5 includes a means for sequentially receiving a first transport container of a first block through
6 a last transport container of a last block.

1 10. The communication bridge according to claim 9 wherein the means for receiving
2 includes a means for detecting communication information in the at least one control byte
3 in a predefined transport container of each block.

1 11. The communication bridge according to claim 10 wherein the means for
2 detecting communication information further comprises a means for detecting back
3 pressure information in the at least one control byte in selected transport containers.

1 12. The communication bridge according to claim 11 wherein each block represents
2 a sub-port with each sub-port being capable of connecting to a plurality of ports and
3 preselected ones the plurality of bits in the at least one control byte being used to identify
4 a port with back pressure, wherein the means for detecting communication information
5 further comprises a means for detecting back pressure information in the at least one
6 control byte in selected transport containers, the means for detecting pressure includes a
7 means for detecting a first logic state of a bit identifying the port with back
8 pressure.